

EFFECTIVENESS OF INFLUENZA VACCINATION IN INSTITUTIONALISED OLDER ADULTS: A SYSTEMATIC REVIEW

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BACKGROUND: Influenza infection is common among institutionalised older adults. Many non-randomised observational studies on influenza vaccination suggested that it could reduce influenza-related hospitalizations and mortality in institutionalised older adults. Criticism regarding the effectiveness of influenza vaccine estimated by non-randomised observational studies includes the frailty selection bias and use of non-specific outcome like all-cause mortality. A systematic review of studies of influenza vaccination in institutionalized older adults to determine the effects on clinical outcomes was conducted.

METHODS: We searched for studies from three databases from 1946 to June 2013 assessing effectiveness against influenza infection. During selection process, we selected studies with well comparability between vaccine group and control group. We expressed vaccine effectiveness (VE) as a proportion, using the formula $VE = 1 - \text{relative risk}$ or $1 - \text{odds ratio}$. We focused on the following outcomes: influenza-like illness (ILI), laboratoryconfirmed influenza, hospitalisations due to ILI or pneumonia and death due to influenza or pneumonia. Allcause mortality was not included.

RESULTS: Eleven studies that satisfied the inclusion criteria were identified, representing 11 262 institutionalised older adults. After meta-analysis, we found a significant reduction in pneumonia ($VE = 37\%$; 95% confidence interval [CI], 18-53%; $P = 0.001$) and death due to pneumonia or influenza ($VE = 34\%$; 95% CI, 10-53%; $P = 0.01$). There was no significant heterogeneity between studies. There was no significant publication bias.

CONCLUSION: Influenza vaccination in institutionalised older adults could reduce pneumonia and death due to pneumonia or influenza. Influenza vaccination is recommended for institutionalised older adults.